AMENDMENT TO THE DRAWINGS

The attached sheets of drawings replace the original sheets including FIGS. 2B, 3A-3C. In the amendment, the reference numerals 13A, 13B and 13C have been deleted.

Attachment: Replacement Sheets (2)

REMARKS

Status of Claims

Claims 1-14 are pending, of which claims 10-14 have been withdrawn due to a restriction requirement.

Claims 1, 2, 3 and 6 have been amended to correct informalities in the claim language and to more clearly define the claimed subject matter. Support for the amendments is found, for example, at paragraph [0034] and FIG. 2A of the present application.

Objection to the Drawings

The Examiner objected to the drawings because Figures 3A, 3B and 3C do not include the reference characters not mentioned in the description. Applicants respectfully submit that the amendments made to the drawings overcome this objection.

Objection to the Specification

The Examiner objected to the specification because of informalities. Applicants respectfully submit that the amendment made to the specification overcomes this objection.

Objection to the Claims

The Examiner objected to claim 6 because of informalities. Applicants respectfully submit that the amendment made to claim 6 overcomes this objection.

Rejection under 35 U.S.C. § 103(a)

Claims 1-9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Li et al. (USP6,173,755) in view of JP 05-318040 (JP '040). Applicants respectfully traverse this rejection for at least the following reasons.

The Examiner asserts that Li discloses the limitations of claim 1 except the heat-conductive layer being arranged on the molten liquid side comprising a material having a heat conductivity equal to or more than 16.7 W/mK. Thus, the Examiner relies on JP '040 asserting that JP `040 discloses the nozzle including a ceramic fiber felt 20 as a low heat conductivity layer and a metal strip 30 as a high heat conductivity layer having the heat conductivity more than 16.7W/mK. Applicants respectfully disagree.

Applicants submit that the metal strip 30 of JP '040 is disposed between the ceramic fiber felt layer 20 and the cooling rill 14 (see, Abstract and FIGS. 2 and 3 of JP '040), but is not arranged on the molten liquid side, as required by claim 1. What is disposed on the molten liquid side in JP '040 is the ceramic fiber felt layer 20 which does not have a heat conductivity equal to or more than 16.7 W/mK. As such, it is clear that JP '040 fails to disclose the above discussed limitations of claim 1 regarding the high heat conductive layer.

As the Examiner concedes, Li does not cure the deficiency of JP '040. Li describes a nozzle with three layers, with (a) refractory material 20, 120 such as PYROTEK B-3, (b) resilient insulating layer 26, 126 such as Q-BLOC, and (c) friction reducing layer 27, 127 such as GRAFOIL (see, FIGS 5-7 and 9; col. 4, lines 44-65; col. 5, lines 13-20; and col. 6, lines 1-4 of Li). The layer which is arranged on the molten liquid side is PYROTEK B-3 (20, 120) and the layer arranged on the movable mold side is GRAFOIL (27, 127) because the friction reduction layer 27, 127 contacts the casting belt 12 (see, col 4, lines 59-61 of Li). PYROTEK B-3 has a

heat conductivity of 0.19-0.26 W/mK. As such, it is clear that, at a minimum, Li fails to disclose the high heat-conductive layer arranged on the molten liquid side being made of a material having a heat conductivity equal to or more than 16.7 W/mK, as required in claim 1.

Accordingly, since neither Li nor JP `040 discloses or suggests the above discussed limitations of claim 1, the combination of these references does not render claim 1 or any dependent claims thereupon obvious.

Regarding claim 2, the Examiner asserts that Li discloses the limitations of claim 2 asserting that the graphite layer 27, 127 of Li is a high elastic layer having an elastic modulus of 5000 MPa or more and a tensile strength of 10 MPa or more. Applicants respectfully submit that the graphite layer 27, 127 of Li contacts the casting belt 12, 112 (see, FIGS. 8 and 9; and col. 4, lines 59-61 of Li). In contrast, the casting tip nozzle of claim 2 is arranged in contact with **the pair of rolls** (see, FIGS. 2A-3C of the present application) to substantially eliminate the interstice between the roll and the tip (see, paragraph [0034] of the present application). As such, it is clear that, at a minimum, Li fails to disclose the above discussed limitations of claim 2 regarding the casting tip nozzle arrangement.

JP '040 does not cure the deficiencies of Li. Although JP '040 appears to use a cooling roll, what actually contacts with the cooling roll is a metal strip 30 made of, for example, stainless steel (see, paragraph [0018] of JP '040), which does not have a tensile strength of 10 MPa or more as required in claim 2. Further, JP '040 discloses only one cooling roll, not a pair of rolls.

Accordingly, since neither Li nor JP '040 discloses or suggests the above discussed limitations of claim 2, the combination of these references does not render claim 2 and any dependent claims thereupon obvious.

Further, Applicants respectfully submit that it would not have been obvious to combine Li with JP '040 to arrive at the subject matter of the claims.

Applicants submit that in order to prevent molten metal from solidification in the casting nozzle, "low thermal conductivity material" has been conventionally used. In contrast, in the present application, in order to obtain a thin and wide casting plate, "high thermal conductivity material" is used for controlling uniform temperature distribution in a width direction because one of the most important factors of casting is temperature distribution in the width direction.

The cited reference does not disclose or suggest this idea disclosed by the present application. The "high thermal-conductivity material" is used for keeping the uniform temperature distribution which is not attained by the above technique of using "low-thermal conductivity material" (see, paragraph [0036] of the present application).

JP '040 discloses composite materials which have a "low-thermal-conductivity material" and a "high-thermal conductivity material." However, the "high-thermal conductivity material" is used to prevent abrasion from sliding, and is arranged at the roll side. In JP '040, the working of the nozzle and shape control is achieved by ceramic fiber layer 20 (i.e., a low-thermal-conductivity material).

As such, it would not have been obvious to combine Li with JP '040 to arrive at the subject matter of the claims because there is no motivation or suggestion to do so. Accordingly, claim 1-9 are patentable over the cited references. Applicants respectfully request that the Examiner withdraw the rejection of claim 1-9.

CONCLUSION

Having fully responded to all matters raised in the Office Action, Applicants submit that all claims are in condition for allowance, an indication for which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

McDERMOTT WILL & EMERY LLP

Brian K. Sullivan Reg. No. 51,321

for Takashi Saito
Limited Recognition No. L0123

600 13t" Street, N.W.
Washington, DC 20005-3096
Phone: 202.756.8000 BKS:TS:lnm
Facsimile: 202.756.8087
Date: January 27, 2009

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